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ABSTRACT

Psychological well-being has been shown to be significantly influenced both by daily and major life events. The impact of two types of daily events on reports of physical and mental well-being was investigated in a multiple-time measurement design. Demand events which occur independently of one's volition, and desire events which arise from one's own choice were examined. Undergraduates (N=101) responded daily for 5 days to health and mood instruments and instruments assessing event occurrence, responses to events, and outcomes of those responses. The results indicated that desire satisfaction was related to taking action whereas demand satisfaction operated independently of demand responding. Demand event components were significant influences on the more negative aspects of well-being such as depression, anxiety, and somatization; quality of life judgments were similarly significantly related. Desire events had few significant relationships and did not relate to positive aspects of well-being. Subjects' responses appeared to be slanted toward the cognitive and behavioral aspects of well-being and were not strongly influenced on the affective/emotional side. The academic environment of subjects during the class weekdays may have generated a predominantly cognitive/behavioral orientation. (NRB)

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Well-Being: A Longitudinal Study of Events, Responses, and Outcomes

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(Paper presented at the annual convention of the American Psychological
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Abstract

This project investigated the impact of two types of daily events on reports of physical and mental well-being in a multiple-measurement design (5 days). Subjects responded daily to health and mood instruments and instruments assessing event occurrence, responses to event, and outcomes of those responses. Positive and negative components of well-being were differentially impacted by types of events (environment- or person-initiated) and the different event properties. The procedure was sensitive to the particular "ecology of events" representative of this particular subject sample. The results suggest the validity of a multicomponent analysis of both events and well-being in a more dynamic, multiple-measurement approach.

Psychological well-being has been shown to be significantly influenced both by daily and major life events (e.g., Dohrenwend & Dohrenwend, 1974; Holmes & Rahe, 1967). Previous research by the authors (Reich & Zautra, 1983; Zautra & Reich, 1983) has shown that both "event" and "well-being" are complex multicomponent concepts, with separately measurable components of each differentially related to each other. The study reported here represents an extension of that approach to a dynamic, repeated-measurements analysis of events and well-being. A multiple-time measurement (5 days in this case) seems appropriate because it is more adapted to assessment of what we have called "event ecologies" (Reich & Zautra, 1983), the range of event experiences and reactions that people maintain in interaction (or more

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appropriately, inter-reaction) with their environment of events. Assessment across time and situations is necessary because daily events probably are widely variable and not repetitive, and positive and negative aspects of well-being tend to operate relatively independently of each other (Bradburn, 1969; Zevon & Tellegen, 1982; Reich & Zautra, 1981). Thus we would expect a more complete analysis of well-being to result if we could detect patterns of events and their relations with well-being, and an initial study in that attempt is reported here.

Events in this approach are conceptualized in terms of their causal source, from within the individual or externally-originated. This analysis is in line with similar distinctions made by such investigators as Bandura (1982, self-efficacy), deCharms (1976, origin-pawn), and Herzberg (1976, hygiene-motivator factors). In our more recent formulations, we have labelled events "demands" when they occur independently of our volition and those arising from our own choice are called "desires." Demands have been shown to relate significantly to negative aspects of well-being such as negative mood, depression, and symptomatology, while desires relate more to positive aspects such as positive mood (Reich & Zautra, 1983).

This formulation is more complex than standard approaches because both types of events are assessed in three linked ways: Event occurrence in terms of presence/absence, the presence/absence of the individual's response to the event, and the hedonic satisfying/unsatisfying tone of the outcome of the response. All three are separate components assessed in questionnaire format in this research approach. These components were shown previously to relate differentially to positive and negative aspects of well-being.

What is not known at this point, however, is the manner in which these variables, components of events and components of well-being, operate on their

own and relate with each other across time in a more representative, repeated-measurement analysis of individual's lives. Event ecologies across time are more likely to reveal significant influences on well-being and gathering such information may prove of use in intervention/prevention programs to enhance positive aspects of well-being and to reduce negative aspects.

We asked subjects to report daily on both classes of variables and predicted that we would detect patterns of significant relationships among demand event components and negative aspects of well-being but not of positive well-being components, and within desire components and positive aspects of well-being but not negative aspects; no cross-domain relationships were expected (demands, positive components; duties, negative components). This pattern was expected to be relatively stable across multiple-days' measurements, but if it were not then an attempt would be made to determine what particular patterns did occur in this type of more comprehensive analysis.

Method

Subjects

Subjects were 113 (54 male and 59 female) introductory psychology students at Arizona State University who participated in partial fulfillment of an experimental participation requirement. At the initial contact (Day 1), in a large group setting subjects answered an initial packet of questionnaires assessing the variables, then were given 4 days' worth of questionnaires to fill out at the end of each day. Upon turning in the completed packets the following Monday, they were asked a short series of questions requesting them to honestly indicate to the experimenters whether they had in fact actually answered each day's questionnaires in the evening of that day as requested and if not, which day they had skipped. A total of 12 subjects either failed to

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answer the honesty question or indicated that in fact they had not answered as requested, so the final sample of subjects whose data were retained for analysis consisted of 101 completed questionnaires of subjects who reported that they had followed all instructions.

Instruments

Independent variables. The demands and desires questionnaires were direct adaptations of the instruments used in prior research (Reich & Zautra, 1983). Each consisted of 30 daily events to which 3 responses were to be made in order: (1) to indicate whether or not that item had occurred during the day (demand/desire frequency), (2) to indicate whether or not he/she had actually responded to the event (demand/desire activity), and (3) satisfaction felt with the outcome of the activity on a 5-point dissatisfaction/satisfaction scale (average demand/desire satisfaction, the total of all satisfaction ratings divided by the number of activities reported).

Dependent variables. Intermixed in counterbalanced order with the demands and desire scales were five measures of health and well-being. Aspects of health were taken from three subscales of the 54-item SCL-90 (Derogatis, Lipman, & Covi, 1973); assessed were total score, somatization, anxiety, and depression. Positive and negative mood scales consisting of 34 adjectives (11 positive, 23 negative) were selected from Lubin's (1965) Depressive Adjective Check List. These 4 scales were answered every day; the instructions of each were modified to have the respondent rate feelings "in the past 24 hours."

Two other scales were included to assess more generalized and enduring aspects of well-being. The Andrews and Withey (1976) Perceived Quality of Life scale and The Affect Balance Scale (Bradburn, 1969) were administered at the first and last assessments only.

Procedure. To control for order effects (practice, fatigue, etc.), all

separate scales were organized into counterbalanced order for the initial testing session and were randomly distributed to the subjects as they appeared for the testing session. For the last 4 days of assessments, the SCL-90 and mood scales appeared first in each student's daily packet and were then followed by demands then desires scales for half of the subjects and desires and demands scales for the other half. The QOL and Affect Balance scales preceded the regular daily scales for the final day's assessment.

Results

General Characteristics of the Demand and Desire Variables

Figure 1 below presents the average daily values for the demand and desire variables. For the analyses to be reported below, the first day's data were excluded because the first reporting period was different from the more similar and regularized reporting on the following four days; the scores were analyzed, therefore, were the means of the last 4 days.

Insert Figure 1 about here

Subjects experienced a $\bar{X}$ of 9.6 demands and 6.8 desires. Their demand activity $\bar{X}$ was 7.7 and the desire activity $\bar{X}$ was 3.7. Subjects in effect then responded to 80.2% of their demands and 48% of their desires. Mean demand outcome satisfaction was 3.2 and that for desires was 3.4. Demand frequency and responding were significantly higher than their corresponding desire variables (paired t values both > 9.0 , $ps < .001$); the satisfaction variables did not differ ($p = .14$). Event frequency and activity were significantly correlated for both variables ($rs = .73$ and $.62$, $ps < .001$), but response activity and satisfaction were correlated only for desires, r for desires = $.36$, $p < .001$; for demands, $r = -.01$, n.s. Thus desire satisfaction was

related to taking action whereas demand satisfaction operated independently of demand responding. Neither satisfaction variable was related to event frequency.

Table 1 presents the Pearson correlations between the independent and dependent variables. Because of the presence of multicollinearity among the variables, the three demand variables and the three desire variables were entered into stepwise multiple regression equations as predictors of the dependent variables. They were entered in the following fashion: The demand variables were entered first for one set of analyses in which all 6 variables were entered, but the beta and F values were recorded only after the first 3 (demand) variables had entered the prediction equation. The results for the desire variables were performed similarly, but the 3 desire variables were entered first followed by the 3 demand variables and values for the desire variables recorded after the third desire variable (satisfaction) had been entered. Table 2 displays the standardized regression and probability levels. Also included are the F tests and p values for the total set of 3 at the point of entry of the 3rd component.

Insert Tables 1 and 2 about here

It was expected from the theoretical perspective discussed earlier that demand events, activities, and outcome satisfaction would be related to negative facets of well-being, the components of desires would be related to positive facets, and there would be little or no "cross-domain" relationship. While the results were generally congruent with that expectation, they were only partially supportive of it and some unexpected cross-domain effects occurred. It should be kept in mind, of course, that the study was

correlational and that in the discussion that follows causality is not necessarily imputed in the patterns of significant relationships discussed.

The demand variables were strongly related to negative aspects of well-being. All subscales and the total score on the SCL-90 increased as the number of demands increased, while response activity in reaction to those demands was significantly related to lowered scores on those same variables. Demand outcome satisfaction also was related significantly to lowered scores.

A similar pattern held for the Quality of Life scale with both scores related positively (the QOL scale is reversed-scored) to demand frequency and inversely (favorably) with demand activity. The outcome satisfaction variable had no significant relationship, contrary to expectation; the Pearson correlations of $-.25$ and $-.27$ were significant and in the predicted direction, however, so it was the multivariate set of predictors in the stepwise regression analyses that was accounting for this particular variable's more direct relationship (see F values in Table 2).

It was expected that the desire components would have no significant relationship with the negative aspects of well-being, but some rather complex relationships were detected. Both the direct Pearson correlations and the regression analyses showed that having desires tended to increase with SCL-90 scores, most clearly for the depression variable. Apparently subjects' experiencing of desires increased depression. This may possibly indicate a frustration effect resulting from unfulfilled desires. At the same time, however, satisfaction with desired activity outcomes tended to relate to lowered SCL-90 and negative mood scores and increased Quality of Life scores.

The variables assessing more purely affective aspects of well-being were not quite as clearly related to the event variables. Affect Balance scores tended to increase with increases in desire outcome satisfaction; the overall

effect of desire variables was marginally significant ($F = 2.21, p < .10$). Although unexpected, this would be understandable if that instrument is regarded as sensitive toward the positive side of well-being. Positive mood, the most direct affective measure of positive well-being, was related to the total set of desire components (regression analyses). Due to multicollinearity, the findings for the individual components of desires were obscured by the regression analyses. The Pearson correlations showed that the desire activity and outcome components had direct positive relationships.

Responding to demands correlated positively with positive mood. Negative mood decreased as demand satisfaction increased, as was expected, but the same negative relationship held for desire satisfaction as well. This joint relationship was unexpected but it suggests the possibility that the lives of this particular set of subjects were especially dominated by more negative states and thus they were especially sensitized to whatever might influence them.

Internal Analysis

The predominance of the demand event components suggested the possibility that desires were of low importance or low impact for our subjects. Inspection of Figure 1 showed that they both increased on the 5th day of data recording; that was a Friday, and for our college student subject population it is a well-known "up" day (reflecting no doubt the popular "TGIF" effect). We sought to determine if desires played a more significant role for our subjects on that particular day, the impact of which was lost in the aggregate analyses we employed for the main analyses. Therefore, a separate analysis of this possibility was performed.

Demand and desire variables for Friday itself were entered as predictors of that same day's dependent variables. Compared to the main analyses, the

results for the demand variables changed results only slightly, showing little change in demand occurrence, an increase in size and significance in the demand activity component, and an elimination of the significance of the outcome satisfaction component. This could be perhaps be interpreted as a daily fluctuation in statistical significance across a series of related measures or it might have more substantive meaning along the lines we are proposing here: The day before the weekend rotates to a more desire-oriented approach to living and a lessening of the role of demands in the subjects' lives. We cannot propose here a definitive answer to that question, but we shall return to it shortly.

An interesting set of changes occurred in the desire variables. All desire outcome satisfaction variables decreased in significance although the direction of the beta values remained unchanged. An increase in significance of the desire activity variable was found for the total score on the Quality of Life scale (beta = .30, p = .004), and negative mood (beta = -.28, p = .007). Engaging in desire activities on Friday thus increased overall quality of life and positive mood scores and decreased negative mood scores. It would appear that in fact desire event variables increased in impact as well as frequency on Friday.

Discussion

The results of this assessment provide a picture of the impact of daily events on the well-being of a sample of college students, and in doing so provide additional support for a necessarily rather complex picture of each and their interaction. Our previous research (e.g., Reich & Zautra, 1983; Zautra & Reich, 1983) has suggested the utility of multicomponent model of events; rather than having subjects indicate the simple presence/absence of events in their lives, this approach requires assessment of presence/absence

of a given event, whether or not the subject responded to it and, if so, the hedonic tone of the outcome of that event-based activity. The data of this study and the previous studies clearly indicate that those components all have distinct patterns of relationships with well-being.

Similarly the data of this study and our previous research demonstrate that well-being itself is a complex combination of positive and negative aspects and that these operate relatively independently of each other and not inversely from each other. The positive mood and positive scale of the affect balance measure on the average only correlated $-.26$ with the negative mood, total SCL-90 and Quality of Life scales, indicating the great proportion of the variance in these scales that was not accounted for by an inverse relationship with each other. A simple bipolar, unidimensional relationship cannot be considered a fully effective model of well-being.

The data we have presented here indicate that significant influence on well-being comes from the type of events that people experience and respond to during their daily activities, but it also is clear that the picture we have been able to develop is only partially complete and only partially supportive of the expectations derived from prior research. The demand event components by and large were significant influences on the more negative aspects of well-being such as depression, anxiety, and somatization; quality of life judgments similarly were significantly related. Desire events, however, had few significant relationships and did not relate to positive aspects of well-being as expected. At this point, one tentative interpretation can be tendered to account for the overall pattern of our data.

As noted in the Results section, there was a strong hint in the data that the subjects' responses were slanted toward the cognitive and behavioral aspects of well-being and were not strongly influenced on the affective/

emotional side. A perusal of the individual items in the dependent variable instruments shows a clear predominance for such types of assessment content. The data of Table 2 showed that the mood adjective scales had few significant correlations with event variables. It would appear that the ongoing life events of our subjects may have generated a predominantly cognitive/behavioral orientation during the week; they were college students in the middle of the semester activities, and the time covered by the study, Monday through Friday, presumably centered upon classwork and homework assignments. Recreation and more purely affective responding typically is centered more on weekends in universities, but that time period was not assessed in this study. The upturn of desire frequency and activity variables on Friday (Fig. 1) may represent a weekend effect ("TGIF?") which might reflect a release from the "demanding" prior weekdays. Four particular findings of this study support this tentative interpretation.

First, Figure 1's data for demand frequency shows a clear bias for demands to be higher in frequency than desires; that held true across all 5 days although, as noted, desires did increase on Friday. Demands thus predominated in the lives of our subjects during this project. Second, all three components of demands appeared to have significant relationships with the well-being measures. Prior research with demands and desires instruments has tended to show that demand frequency and activity were not often predictors of well-being. For this sample, however, they were strongly predictive on several different measures. Third, demand activity, the simple sum of demands responded to, correlated positively with positive mood; subjects felt more positively as they responded to more demands. That result has not been found in our prior research, but it would seem congruent with the notion that our subjects were under strong demand pressure during the week and felt some

positive affect at responding to it. Fourth, the t-test analyses of the basic frequencies of the occurrence and activity variables of demands and desires showed that subjects had significantly higher scores on the demand components.

Our tentative conclusion at this point, then, is that our particular sample of subjects and the experimental arrangements happened to tap into a situation in which mood affect components of well-being were not a prominent aspect of the daily living of our subjects; they appeared to have been dominated by demand oriented activities and coping and problem-solving cognitions. Perusal of the items in the SCL-90 and Quality of Life Scales, for instance, revealed considerable cognitive and behavioral content of the item wordings ("Suddenly scared for no reason," "worrying too much about things," "how do you feel about your chances for relaxation even for a short time?"), whereas positive and negative adjectives scales tapped into more purely feeling-toned states ("sad," "fine," "desolate," "elated"). We thus appeared to have tapped a "work week" condition in our subjects. We have no evidence to support our interpretation beyond the data reported here, but the interpretation is consistent with the data presented earlier, and the "Friday effect" discussed in the internal analyses provided particularly interesting support for the possibility. We have argued earlier (Reich & Zautra, 1983) that the demand and desire methodology is particularly suited for analyzing the event ecologies in which people live, and the results of this study seem suitably supportive of that possibility. Of course, further investigation of this possibility is called for. This might involve assessment of people in a more desire-oriented setting with low demand prevalence; a leisure situation such as people on a vacation might be an appropriate setting. Whether or not a mirror image of these data would be found is a remote possibility, but it is clear at this point that even greater complexity of models of events and well-

being will have to be generated before we have a reasonably complete approach to enhancing the daily living of people.

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Table 1

Pearson correlation coefficients and probability estimates for the event and well-being variables[†]

	Demand Frequency	Demand Activity	Demand Satisfaction	Desire Frequency	Desire Activity	Desire Satisfaction
SCL-90						
Total Score	.42***	.17*	-.34*	.32***	.16	-.21*
Depression	.33***	.09	-.35	.40***	.18*	-.23*
Anxiety	.32***	.14	-.21*	.19*	.12	-.09
Somatization	.27**	.10	-.12	.10	.05	-.04
Quality of Life						
Total Score	.23**	.01	.25**	.18	.00	-.34***
"Life as a whole"	.20*	-.05	-.27**	.13	.11	-.25**
Affect Balance	-.12	.01	.16	-.14	.08	.36***
Positive Mood Adjs.	.13	.25**	.16	.12	.31***	.32***
Negative Mood Adjs.	.21*	.16	-.07	.31***	.19	-.15

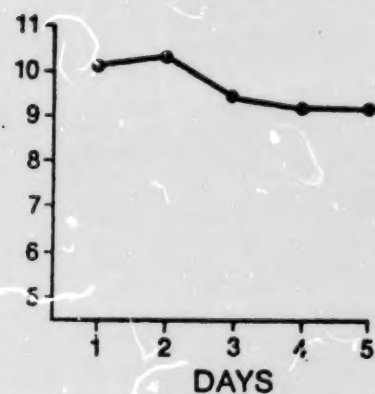
[†]Ns for these values vary from 88 to 101* $p < .05$. ** $p < .01$. *** $p < .001$

Table 2

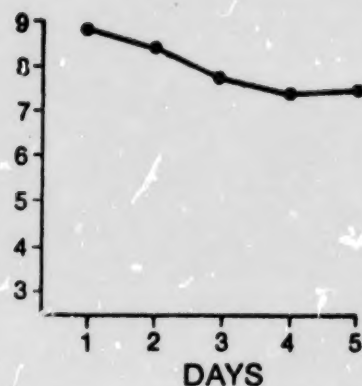
Standardized beta weights, F values and probability estimates for event and well-being variables

	Demand Frequency	Demand Activity	Demand Satisfaction	<u>F</u>	Desire Frequency	Desire Activity	Desire Satisfaction	<u>F</u>
SCL-90								
Total Score	.59***	-.32*	-.25**	15.37***	.30	.02	-.16	3.38*
Depression	.50***	-.33*	-.31**	8.99***	.41*	.01	-.20	6.05***
Anxiety	.45**	-.26	-.21*	5.41**	.08	.09	-.12	.78
Stigmatization	.40**	-.30*	-.10	2.96*	.02	.01	.01	.02
Quality of Life								
Total Score	.44**	-.39**	.06	2.96*	.07	.06	-.25	1.77
"Life as a whole"	.41**	-.40	-.06	3.25*	-.11	.28	-.24	1.56
Affect Balance	-.12	.21	.07	.87	-.09	.00	.27*	2.21
Positive Mood Adjs.	-.13	.46**	-.10	4.19**	.01	.23	.16	3.01*
Negative Mood Adjs.	.14	-.09	-.25*	2.21	.18	.20	-.30*	5.03**

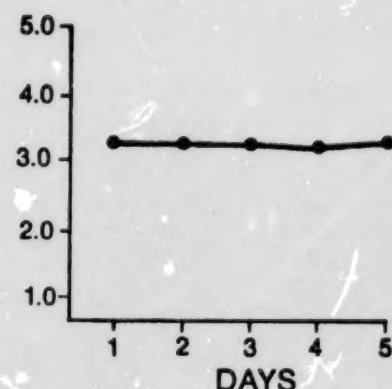
* $p < .05$. ** $p < .01$. *** $p < .001$



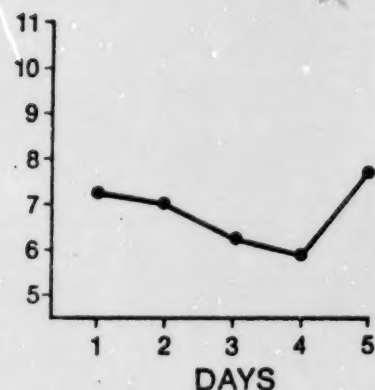
DEMAND FREQUENCY



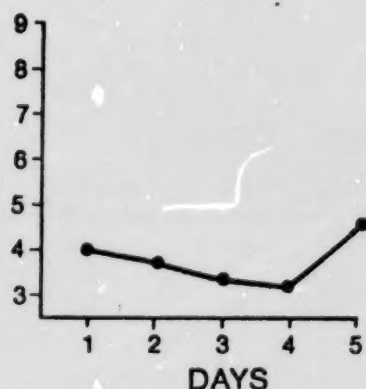
DEMAND ACTIVITY



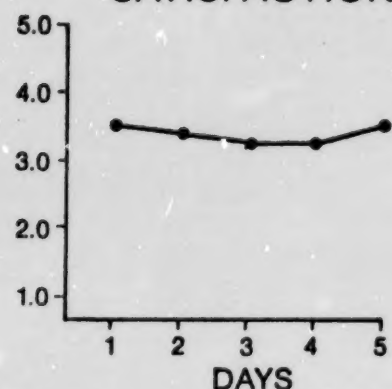
AVERAGE DEMAND SATISFACTION



DESIRE FREQUENCY



DESIRE ACTIVITY



AVERAGE DESIRE SATISFACTION

Figure I. DEMAND AND DESIRE VARIABLES FOR 5 DAILY ASSESSMENTS
(N_S=95 to 101)